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### Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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### Marine Corps War Memorial

Nine years ago this winter the victory on Iwo Jima, marked by the famous flag raising, brought a thrill to the hearts of all Americans. The Marine Corps has never had a national symbol commemorating that heroic deed, but such a symbol is now becoming a reality. A monument, 110 feet high, which will be the largest bronze group in the world, portraying the historic flag raising on Iwo Jima by three Marines and a Hospital Corpsman, is over two-thirds completed. Designed by the world-famous sculptor, Felix de Weldon, it will symbolize the many glorious deeds of valor performed by the United States Marine Corps during our nation's history. Today the ground has been broken to construct such a monument, on a grassy slope, adjoining Arlington National Cemetery. When dedicated on November 10, this heroic memorial, the statue of the historic flag raising of Iwo Jima, will offer a commanding view of the city of Washington.

The Marine Corps War Memorial Foundation is accepting contributions from Marines and friends of Marines to complete the Memorial. Over \$500,000 has already been donated, and \$250,000 more is needed. Because so many Medical Department personnel, officers and enlisted, have served with the Marines, and because a close relationship has always existed between the Medical Department and the Marine Corps, it is believed that many may wish to contribute to make this Memorial possible. Contributions will be accepted by any Marine Corps Commanding Officer or may be sent direct to: The Marine Corps War Memorial, Henderson Hall, Headquarters, U. S. Marine Corps, Washington 25, D. C.

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Policy Regarding Participation in  
American Specialty Board Examinations

Uniform policies and procedures have been adopted by the Medical Services of the Armed Forces which will permit qualified medical officers stationed overseas to take the professional examinations leading to certification by the various American Specialty Boards. These measures are in accord with agreements reached with representatives of the various Specialty Boards at a recent meeting of the Advisory Board for Medical Specialties. These procedures will become effective on 1 June 1954.

The Department of Defense has assigned Service responsibility for assisting the various Boards in giving Part I of their examinations as follows:

<u>Area</u>	<u>Department</u>
Far East	Army
Europe	Army
Mediterranean and North Africa	Navy
Alaska	Air Force

When the Surgeon General of the appropriate Department is informed by a Specialty Board that it has one or more candidates for examination in the overseas area for which he is responsible, he will furnish for that examination the name and address of a proctor stationed in that area.

The Bureau of Medicine and Surgery desires that the following policy relative to Specialty Board examinations be adhered to by all naval medical officers assigned duty outside the continental limits of the United States:

(a) Part I (written examination)

That portion of the examination by an American Specialty Board which is referred to as Part I (written examination), may be taken by eligible candidates outside the CLUSA providing, (1) that he has complied with existing instructions (BuMed Inst. 1500.4A) relative to residency training, (2) that the candidate possesses a letter from the Secretary of the American Board concerned that he is eligible to participate in the examination, and (3) that he insures that his eligibility is a matter of record with the officer designated in his area to serve as proctor for the examination.

(b) Part II (oral examination or those single examinations given by Boards which do not divide their examinations into two distinct parts)

The Advisory Board for Medical Specialties has gone on record as not favoring the giving of examinations in this category outside the continental limits of the United States. Therefore, medical officer personnel on duty outside CLUSA may not participate in Part II Specialty Board examinations or in those single examinations given by those Boards which do not divide their examinations into two distinct parts, without returning to the United States.

Medical officers on duty outside CLUSA may apply via their commanding officers for TAD orders specifying government air travel, when available, to take Part II of Specialty Board examinations ONLY when the following pertain:

(1) When the officer's sea or overseas tour of duty extends 2 full years or more;

(2) When the officer will have at least 1 full year of his sea or overseas assignment remaining upon his return to duty following completion of the examination;

(3) When the needs of the service will permit the officer's absence from his station of duty for the time required to take the examination.

(4) When the cost to the Government can be defrayed from available appropriated funds. (ProfDiv, BuMed)

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#### Attrition Among Diving School Candidates

The following excerpts, taken from a recent BuPers letter, are reproduced herewith for the information and appropriate action of all medical officers who examine candidates in accordance with Art. 15-30, ManMed-Dept.

"Subj: Non-Compliance with Instruction Pertaining to Selection of Candidates for Diving Instruction

\*"Ref: (a) BuPers Instruction 1500.15 of 13 July 1953

"1. A recently completed analysis of the records of 6 enlisted classes at the U.S. Naval School, Salvage, Bayonne, N.J., indicates that of the 124 enlisted candidates reporting for instruction 56 failed to complete the courses. It appears that non-compliance with reference (a) was the principal reason for the reporting to the School of the relatively large number of personnel who are physically or temperamentally unsuited for diving duty.

"3. Disposition of the 124 candidates received for training at the Naval School, Salvage, was as follows:

"a. Rejected as being physically or temperamentally unsuited for diving:

"1. Unable to stand pressure	5
"2. Claustrophobia	7

\*Reference (a) further refers to Art. 15-30, ManMedDept



"3. Emotional instability	10
"4. Over age	2
"5. Other medical reasons	12
Total	36
"b. Disenrolled for other reasons:	
"1. Unsatisfactory scholastic progress	12
"2. Own request	7
"3. Disciplinary reasons	1
Total	20
"c. Total rejected or disenrolled:	
(a. plus b. above).....	56

"4. The Chief of Naval Personnel is of the opinion that compliance with reference (a) would have resulted in the elimination of most of the 36 candidates rejected for the reasons indicated in paragraph 3. a. of this letter. Inasmuch as such elimination would have occurred before personnel were detached from their duty stations, considerable savings in travel cost and travel time might have been effected." (SubMedDiv, BuMed)

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### Carcinoma of the Prostate

The remarkably high incidence of carcinoma of the prostate in men more than 50 years of age is probably not yet fully appreciated by many in the medical profession. Incidences ranging from 15 to 30% have frequently been reported in routine autopsies of men in the older age brackets. This means that in nearly one-third of the male population over 50 there is a possibility of the development of prostatic carcinoma. It would also indicate that, at present, between 3,000,000 and 5,000,000 men in the United States probably have carcinoma of the prostate. Carcinoma is the cause of prostatic obstruction in approximately one-fifth of cases of the latter condition encountered clinically.

Carcinoma of the prostate should be curable, as is cancer in any other part of the body. Even today, however, with a "cancer-conscious" population and increasing recognition of the importance of routine rectal examination of men, only 5 to 10% of prostatic carcinomas are recognized at a stage when complete extirpation is possible. For this reason the important factors involved in the recognition of this disease deserve re-emphasis.

Any small, discrete, nodular, firm area discovered by rectal palpation of the prostatic capsule should be considered suggestive of carcinoma of the prostate until proved otherwise, for only in the early stages is cure possible. In the more advanced stages the growth will have involved larger portions of the gland, producing an irregular, extremely firm, palpable mass infiltrating the prostate, with fixation of the gland and distortion of

its normal contours. It may extend up one or both seminal vesicles or laterally into the periprostatic areas, obliterating the normal peripheral demarcations of the gland. The general size of the prostate may or may not be materially affected. Other prostatic lesions capable of producing similar palpable characteristics include calculous disease, which can be readily excluded by means of a plain roentgenogram of this area; tuberculosis, which can be eliminated by appropriate roentgenograms and bacteriologic studies of the entire urinary tract, and deep-seated chronic inflammatory disease of the prostate, which is sometimes difficult to distinguish from cancer until appropriate treatment causes at least partial resolution of the inflammatory process, producing softening in the palpable characteristics of the gland. Roentgenograms of the spine, pelvis, long bones, and chest will determine the presence or absence of bony metastases.

An increasing number of urologic surgeons now consider early carcinoma of the prostate potentially curable by radical surgical excision. It is also of great importance in considering radical operation, even in the early stages, to be convinced that the general health and life expectancy of the patient justify an extensive surgical procedure. It is generally agreed that men over 70 years of age are not suitable candidates for radical operation, as their life expectancy is such that they are likely to be able to live with the disease throughout their remaining years.

Many consider radical prostatectomy indicated for patients in whom carcinoma is not suspected from the gross appearance of the tissue or the palpable characteristics of the prostate but in whom islands of highly malignant, anaplastic, carcinomatous growth are observed microscopically in prostatic tissue removed by subtotal prostatectomy. Although in the past many such patients have been followed for years without evidence of recurrence of the carcinomatous growth after subtotal prostatectomy, it is thought that these represent relatively low grade and slowly growing islands of malignant growth not likely to have extended even to the capsule at the time of enucleation. Therefore, radical prostatectomy following subtotal prostatectomy should be performed only in those cases in which the anaplastic characteristics of the islands of malignant tissue encountered suggest a rapidly growing tumor capable of extensive metastasis and therefore indicate the necessity for subsequent removal of the capsule and adjacent structures.

Since the advent of hormonal therapy, attempts have been made to eradicate prostatic malignant disease by delayed radical prostatectomy in patients in whom the tumor appeared too far advanced for such measures when first discovered but who responded to hormonal therapy favorably enough to suggest that what remained of the disease was later confined entirely to the prostate and therefore amenable to complete surgical removal. The late results following such attempts at radical cure have been discouraging, however, and they are no longer attempted by many of their original proponents.



The palliative treatment of incurable carcinoma of the prostate consists first in the relief of urinary obstruction, when present, usually by transurethral resection or occasionally by permanent suprapubic cystotomy when resection is not feasible, and second, in irradiation or hormonal therapy designed to control progress of the local growth and its metastases.

Irradiation therapy in the form of high voltage roentgen ray treatment or radium has never proved very effective and has only limited value. Occasionally, roentgen ray therapy influences metastatic lesions to an extent sufficient to increase the comfort and well-being of the patient or to prevent sloughing or bleeding from the local lesion, but it is impossible to deliver an effective dose to the primary tumor itself without serious damage to neighboring structures, such as the rectum. Radium has proved of questionable value because of the local reaction it may produce in the immediate area, with distressing postirradiation sequelae.

More recently, the introduction of radioactive isotopes directly into the lesion through a combined suprapubic and retropubic approach has been tried extensively. Use of this material in the treatment of other malignant diseases stimulated interest in its application to patients with advanced prostatic carcinoma.

In a consideration of this type of therapy for prostatic carcinoma, the question always arises as to whether carcinoma of the prostate can be cured by any type of irradiation, and radioactive isotopes simply constitute another form of irradiation.

Hormonal therapy of carcinoma of the prostate received its greatest impetus from the work of Huggins, who, in 1941, demonstrated the value of estrogenic therapy and castration in control of this disease. Whereas this form of therapy cannot produce a cure, present experience has shown that control of the symptoms and temporary regression of the disease can be obtained in most cases. There is a consistent increase in the life expectancy of almost all patients so treated. In the largest single group of cases so far studied, Nesbit and Baum reported that in most patients with inoperable carcinoma of the prostate treated by either oral administration of the female hormone, by orchidectomy, or by a combination of the two, a significantly greater number of patients in all categories were alive after 5 years than among untreated controls, 90 to 94% of whom were dead at the end of 5 years. Most patients with inoperable carcinoma of the prostate treated by hormonal therapy, even those with extensive metastatic disease, show clinical improvement. Elevated levels of serum acid phosphatase may return to normal, and the prostate may be so altered in size and consistency that it becomes impossible to detect gross evidence of tumor on rectal palpation. These patients regain their strength, are relieved of metastatic pain, and are able to resume an active life.

Certain other hormones have been employed in the treatment of patients whose disease can no longer be controlled by estrogenic therapy, in an effort to decrease the formation of the androgen-stimulating hormone of

the pituitary. Among these are testosterone and progesterone. Beneficial clinical effects have been noted in some instances after cessation of this therapy, and, in fact, symptomatic improvement has been reported in small numbers of cases even during the administration of testosterone.

Still more recently, cortisone has been rather widely used for far-advanced growths no longer controllable by estrogenic therapy and castration. This is done to minimize, or to abolish as nearly as possible, the adrenal production of androgenic hormones. This form of therapy has the additional advantage of increasing the appetite and producing a feeling of well-being in the patient. It should be employed only after orchidectomy, and estrogenic therapy should be continued along with it. The amount usually employed at present is 50 mg. in 2 doses. With this dosage supportive adjunctive therapy is not considered necessary, as would be the case with larger doses, but it is recognized that, if the hormone is to be discontinued for any reason, it should be done gradually to avoid the dangers of sudden withdrawal. Cortisone therapy is contraindicated for patients with congestive heart failure, psychoses, tuberculosis, peptic ulcer, diabetes, or renal insufficiency. Symptomatic improvement, sometimes dramatic, has frequently followed its use, although more time and experience will obviously be necessary to determine its true worth. (J. Internat. Coll. Surgeons, Feb. 1954, W. E. Kittredge, M.D.; Departments of Urology, Ochsner Clinic and Tulane University of Louisiana, School of Medicine, New Orleans, La.)

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### Osteomyelitis of the Spine Following Prostatic Surgery

Vertebral osteomyelitis following prostatectomy has been described previously, but little mention of the condition is made in the radiological literature. Although a rare complication of prostatic surgery, osteomyelitis of the spine is a debilitating condition in the early diagnosis of which the radiologist may be of aid if he is alert to its possibility.

Surgical interference with the prostatic bed creates an excellent opportunity for infection to occur and to spread to the spine. Nevertheless, relatively few cases are reported. Deming and Zaff described 3 cases in 1942, Donahue reported 2 cases in 1949, and Adlerman and Duff mention 1 case, all of which followed prostatectomy. These cases plus the 2 recorded here are reviewed.

None of the patients in this series revealed any evidence of urinary tract infection prior to operation.

Back symptoms appeared at an average of 4 weeks following surgery, at which time there was no temperature elevation or leukocytosis and only minimal local signs. The pain was invariably severe, aggravated by any motion, and not relieved by narcotics. Immobilization afforded prompt relief.



The average time required for the appearance of bone changes on the roentgenogram was 9 weeks following surgery. The most common area of involvement was the lower thoracic and upper lumbar spine. In all but 1 case there was persistent disk destruction. The site of destruction of the vertebral bodies was predominantly anterior and unilateral. With 1 exception all patients had destruction of opposing portions of adjacent vertebral bodies. (Radiology, Mar. 1954, E. De Feo, M.D.; St. Clare's Hospital, Schenectady, N. Y.)

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### Results of Roentgen Therapy in Cancer of the Larynx

This article is concerned only with a statement of results and does not include a description of techniques of irradiation or of early or late complications. It permits certain conclusions concerning the role of irradiation and the place of surgery in cancer of the larynx.

The results indicate the following:

1. Cancer of the true cord which is limited to the vocal cord and has not encroached upon the anterior or posterior commissure, with free arytenoid mobility, can be controlled by roentgen therapy with an assurance equal to that of laryngofissure and cordectomy.

The choice between surgery and irradiation is one which the patient may share, but it is generally not appreciated by the laryngological surgeon that "roentgen therapy in the most enlightened manner" offers an excellent prognosis and without impairment of the voice.

2. Of those patients who would otherwise have required a laryngectomy for reasons of extent of disease only, roentgen therapy alone or followed by laryngectomy, when unsuccessful, salvaged 50%. The more important patients in this group are those who survived without a laryngectomy and with little impairment of voice. Although in the authors' group, 9 of 25 patients were so fortunate, it is to be considered also that the failures include those who refused laryngectomy (2), patients with severe cardiac conditions who would not have tolerated laryngectomy (2), patients who died of metastases with the larynx controlled (2), and those who died of intercurrent disease with the larynx controlled (4). Laryngectomy alone in the most skilled hands is not successful in more than 50% of all the patients operated upon, and in all of these the patient must resort to permanent tracheotomy and loss of the normal voice.

There are patients with endolaryngeal cancer for whom one can predict that roentgen therapy will be a failure. They are the more advanced cases, with necrosis of cartilage, arytenoid fixation, or subglottic cancer which invades adjacent cartilage. These are the patients requiring initial laryngectomy. There are others, however, for whom x-ray therapy should be the initial treatment, with the understanding that laryngectomy may be

necessary in case of failure. Three in the authors' group were so treated, and 2 of them survived. With due attention to technique of treatment, the later surgery is not complicated by previous irradiation, and the patient was given the opportunity of retaining the larynx. Cutler, Harris, Lenz, and Nielsen reported similar experiences in larger groups.

In all endolaryngeal cancer (other than early vocal cord lesions), laryngectomy alone offers a more certain prognosis, but with a high price in disability. The authors are of the opinion that the operation is unnecessary in at least one-third of the patients in whom it is done, and that in this group roentgen therapy has a place in the treatment of laryngeal cancer which as yet is generally unrecognized or ignored.

Certain of those laryngeal cancers which have extended outside the larynx to invade the pharynx, base of the tongue, or adjacent structures of the neck are not necessarily hopeless. Six of these 12 were advanced cancers destroying the epiglottis, invading adjacent pharynx, or base of the tongue, and with a tendency to early and considerable lymph node metastases in the neck. This group of 12 patients with advanced lesions, all inoperable, of whom 6 survived for more than 4 years, indicates that x-ray therapy undertaken with due attention to the many complications which may arise has more than a palliative role in the treatment of laryngeal cancer. It is to be noted, however, that only 3 of 42 patients treated had early vocal cord lesions and that the radiation therapist continues to see the more advanced or inoperable cases. In carefully following their treatment and later course, he adds immeasurably to his experience, and in a quite significant number he preserves the patient's life and his larynx. (Arch. Otolaryng., Mar. 1954, S. T. Cantril, M.D. and F. Buschke, M.D.; Tumor Institute of the Swedish Hospital, Seattle, Wash.)

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### Bronchiogenic Carcinoma

A group of 234 consecutive autopsies on cases of bronchiogenic carcinoma were reviewed to determine the different clinical types and the most common sites of metastases. The literature was also reviewed.

The exact origin or cell derivation of each particular type of bronchiogenic carcinoma is not entirely settled, but the authors believe that the epidermoid and undifferentiated carcinomas arise from the basal cell layer and the adenocarcinomas arise from the bronchial glands.

The authors attempted to simplify their classification by using three main categories, each with its individual subdivisions. They included in the epidermoid group the squamous-cell carcinoma with and without pearl formation and the undifferentiated squamous-cell type. These are made up of large eosinophilic staining cells, appearing polyhedral and platelike with a relatively small nucleus rich in chromatin. The adenocarcinomas



included mucus- and nonmucus-producing types. The undifferentiated group, which the authors believe is the most malignant, includes the so-called "oat-cell," round-cell, and small-cell carcinomas. Microscopically, it is a small ovoid cell with a large nucleus, rich in chromatin, and appearing like a lymphocyte in fixed hematoxylin and eosin material. These cells closely resemble lymphosarcoma cells. The authors believe that any further differentiation is a matter of personal impression and interpretation. These various groups occasionally occur in combination with one cell type predominating.

The authors found no cases that would satisfactorily meet any or all of the criteria established for the diagnosis of the so-called alveolar-cell carcinoma. They were able to find a primary in the main stem bronchus with dropped metastases in the alveoli in several cases which gave the impression of a so-called alveolar-cell carcinoma. In more recent literature the so-called alveolar-cell carcinoma has been termed adenomatosis and is thought not to be in the carcinoma realm.

The problem of metastases from malignant pulmonary tumors is of major importance since the employment of lobectomy and pneumonectomy in its treatment. The routes of spread are not many, but these must be considered: (1) lymphogenous spread; (2) hematogenous spread, including the vertebral veins; (3) direct extension; (4) implantation, following such procedures as aspiration, aspiration biopsy, and operation; and (5) bronchiogenic spread.

It is believed that the frequent occurrence of metastasis in carcinoma of the lung is due to the fact that the lungs have such a rich vascular and lymphatic bed. There is a greater tendency for bronchiogenic carcinoma to be disseminated throughout the body by the invasion of blood vessels than carcinomas arising elsewhere.

Carcinomas arising elsewhere liberate emboli into systemic veins which are caught or filtered out in the lung, while those liberated in the portal venous system find their way into the liver. Those liberated from the lungs into the pulmonary veins, or into the left chamber of the heart, will be caught in any peripheral organ to which they are carried.

The usual tendency is to invade regional lymphatics, thus the para-bronchial and peritracheal nodes first, then the mediastinal lymph nodes. Early metastasis is the rule in primary bronchiogenic carcinoma. Signs of metastases may be the presenting symptom or symptoms of the patient and may appear early.

The first clinical manifestations of bronchiogenic carcinoma may be due to intracranial metastases, simulating a symptom complex produced by a rapidly growing and highly invasive primary tumor of the brain. King and Ford after reviewing 100 cases at Johns Hopkins concluded that carcinoma of the lung metastasizes to the brain more frequently than any other type of malignancy. This is due to the malignant cells being carried by the blood

stream to the brain without passing through the capillary bed of the lungs. They reported that of 448 cases 52, or 12%, showed symptoms referable to the central nervous system rather than the bronchus. There were 19 cases or 4% in which the symptoms referable to the central nervous system were the presenting ones. The type of carcinoma was not a factor in the incidence of metastasis to the central nervous system.

Metastases play an important role in the treatment of bronchiogenic carcinoma since the advent of surgery for this condition.

There is no organ or structure in the body which escapes metastases.

The simplest classification is epidermoid, adenocarcinoma, and undifferentiated. However, combinations of these do occur and would be difficult to fit into this arbitrary categorization. (J. Thoracic Surg., Mar. 1954, R. M. Engelman, M.D., and W. L. McNamara, M.D.; Hines Veterans Hospital, Hines, Ill.)

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#### Approach for Midthoracic Esophageal Carcinoma

There have been many varying techniques used for approach and for anastomosis when subtotal esophagectomy has been necessary in the radical surgical treatment of malignancy of the esophagus. However, the operative method which the author introduces in this report appears to be the best. This opinion is based on the fact that the author utilized a variety of methods in many esophageal operations in the past 7 years, not one of which proved satisfactory until this new approach was devised.

This operative method necessitates only one incision, the thoraco-abdominal extending from the right thorax, although incisions of the costal angles may be utilized to get complete exposure of the esophagogastric canal. However, neither costectomy nor incision of the diaphragm is required. In addition, the operative technique shortens the operative time because of the simplified procedure, and reduces the amount of bleeding throughout the entire operative procedure.

This operation is applicable only for those patients whose gastric blood supply is not dangerously interfered with by the mobilization. If cicatricial healing of the gastric ulcer on the lesser curvature is noticeable, or if it is seen that ligation of the arterial arches on the lesser curvature is essential to increase the scope of the operation, then esophagogastric anastomosis is to be preferred. Because the author obtained such satisfying and enlightening results in his examination of the gastric blood circulation and thus could determine which arteries could be safely ligated without jeopardizing the blood supply of the gastric wall, the author believes that intrathoracic esophagogastric anastomosis can be performed without any fear. (Surg., Apr. 1954, K. Nakayama, M.D.; School of Medicine, Chiba University, Chiba, Japan)



### Desmoid Tumors

Desmoid tumors are hard, fibrous, infiltrating tumors, usually found in the anterior abdominal wall and which arise from the fibroblast of the deep fascia and aponeurotic structures. They do not metastasize; consequently, their complete removal results in cure. While such tumors have been described as occurring in various parts of the body wherever skeletal muscles are found, the fascia connected with the recti and internal and external oblique muscles are by far the most frequent areas involved.

Such tumors may occur in any age group, but are thought by some observers, particularly Pack, to be related to pregnancy, because in his experience they are more commonly found in females in the child-bearing period. These tumors give few, if any, symptoms; therefore, their presence is usually discovered on routine physical examination or accidentally by the patient. They grow slowly, infiltrate, and destroy the muscle fibers and tend to follow the direction of least resistance; hence, follow the course of muscle bundles and fascia planes. While beginning unilaterally, they slowly infiltrate the abdominal wall and may ultimately invade this structure widely, making their removal a major or impossible task. They have been found adherent to the periosteum of the pelvic bones, attached to Poupart's ligament, and in 2 of the cases reported, the tumor had infiltrated the entire thickness of the abdominal wall and had become intimately adherent to the sigmoid colon and omentum. Whether or not visceral organs may be invaded by these tumors seems to be a point as yet undetermined. In one of the author's cases, the attached area of sigmoid was resected with the tumor, but actual invasion of the gut wall could not be demonstrated on microscopic examination. On physical examination, the tumor is usually recognized as lying deeply in the abdominal wall, coming more into prominence when the head is raised and the body flexed in contradistinction to tumors lying within the abdominal cavity.

Desmoid tumors occur rarely; consequently, no one has the opportunity of dealing with the problems of their surgical removal often, and rarely when there is extensive involvement of the abdominal wall necessitating its wide removal. Because complete removal of the tumor is tantamount to a successful outcome, the surgeon must not be influenced to be conservative, fearful that he will be unable to deal successfully with the defect which he has created. The repair of the abdominal wall has been so successfully accomplished in the 2 cases in which wide removal was necessary that a description of the method used seems worth recording.

In conclusion the author wishes to emphasize the following points: Desmoid tumors are slow growing and do not metastasize, but they may ultimately undergo sarcomatous degeneration. They are curable by complete removal, but continue to grow when operation is incomplete. They should be removed early so as to prevent the necessity of sacrificing a large part of the abdominal wall. However, even though as much as half

of the anterior abdominal wall must be removed to effect a cure, the method described, using fascia lata to replace this structure, has been found most effective. The surrounding parietal peritoneum lends itself to extensive mobilization and for this reason large defects can be completely peritonealized. Attention is called to the regression of a desmoid tumor concomitant with onset of menstruation. No similar case has been found reported in the literature and the significance of this observation has not been determined. (Ann. Surg., Mar. 1954, J. E. Strode, M.D.; Straub Clinic, Honolulu, Hawaii)

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Cessation of Circulation in Hypothermia:  
Anesthetic Management

After continued success was obtained experimentally at temperatures between 24 and 26° C. with 15 minutes of occlusion of cardiac inflow, the procedure was applied to human beings in the operating room.

To date this method has been employed in 11 cases. All patients recovered satisfactorily from the anesthesia. The premedication was the same as for surgical procedures at normal temperatures. The dosages of morphine sulfate and atropine depended on age, size, and condition of the patients. The night before operation, a size 18 or larger polyethylene catheter was placed in the long saphenous vein. Smaller polyethylene tubes do not permit adequate flow. If the patient was apprehensive, sleep was induced with pentothal, followed by cyclopropane and ether; otherwise pentothal was not used. The patients were permitted to breathe oxygen for several minutes before any anesthetic agent was given. Cyclopropane was used only to diminish reflexes to the point where ether could be added without stimulation. Continuous electrocardiographic tracings were started before cooling. Lower second plane ether anesthesia was induced and then the patient was immersed in ice water. On a few occasions, the patient showed signs of stimulation, that is, shivering or greater depth of respiration on immersion in ice water. In those cases, cyclopropane was added to the anesthetic mixture to deepen anesthesia rapidly. At about 29° C. spontaneous respiratory efforts usually ceased. Thereafter, until the end of the procedure, hyperventilation was employed, using oxygen. Some of the patients made slight respiratory efforts at body temperatures as low as 25° C. In 2 cases it was noted while the patient was in ice water that after inflation of the lungs by pressure on the breathing bag, they were very slow in deflating; as much as 2 seconds elapsed before the lungs became deflated. No explanation is known for this phenomenon. Usually, the patients were not well relaxed by the time the incision was made. In 2 cases it was necessary to give curare intravenously to keep the patient quiet on the operating table.



It should be emphasized that the temperature of the patient continued to drop after removal from the ice bath. The patients weighed from 34 to 140 pounds. Two were adults. Cooling required from 23 to 77 minutes. The skin touched by the cold water became hyperemic. The face of the patient became white. The pupils were usually fairly large, probably because the anesthetic agent was no longer administered when hypothermia appeared, and the plane of anesthesia became quite light. In 1 patient, on occlusion of the vena cava, there was a violent movement of the diaphragm. Because of this experience, the patients were usually given Flaxedil a few minutes before circulatory arrest was produced in order to keep the diaphragm quiet for manipulations by the surgeon.

After the occlusion, the patients frequently moved fairly soon, indicating awakening. Usually warm water was circulated through the mattress when the patient was placed on the table, so that the temperature would stop falling and be between 23 and 25° C. at the time of circulatory arrest. Inasmuch as anesthesia was maintained without administration of much drug, the patient frequently started to move as soon as the temperature began to rise. This usually occurred before closure was completed. Fifty percent nitrous oxide in oxygen was used to keep the patient quiet for closure and for warming. The sutured incision was covered with collodion. Sections of rubber gloves were placed around the chest tubes and their edges were also covered with collodion. The patients were then placed in water at 45° C. until their own temperature rose to about 33° C. This required about an hour after the end of the surgical procedure. Nasal oxygen was given in the Recovery Room because the peripheral circulation appeared slow.

Ventricular fibrillation occurred in 1 case some time between removal from the ice water and the moment the electrocardiogram was connected on the operating table. This interval was about 5 minutes. It was exactly 2 minutes after the electrocardiogram showed ventricular fibrillation that cardiac massage was actually begun. That massage was adequate was evidenced by a good peripheral pulse. The patient was given 0.5 mEq. of potassium chloride in the aorta, the distal aorta being clamped; by cardiac massage this solution was then pushed through the coronary circulation. The heart stopped. Calcium chloride, 2 cc. of a 2% solution, was given. Cardiac massage was begun and the heart soon beat spontaneously.

There is no doubt that hypothermia is effective as an anesthetic agent. None of the 11 patients who underwent this procedure had deleterious effects from it. The main danger as reported by all investigators is circulatory failure. This consists for the most part of ventricular fibrillation. The cause of this dangerous arrhythmia appears to be a prolongation of the latent period in the conduction system of the heart, so that any stimulation, however slight, results in incoordinated fibrillary twitching of the ventricles. Arrest of ventricular fibrillation by injection of potassium chloride into the coronary arteries was most efficient in the authors' laboratory. The authors believe that this is the method of choice. (Anesthesiology, Mar. 1954,

I. Zeavin, M.D., R. W. Virtue, Ph.D., M.D., and H. Swan, M.D.; Halstead Laboratory and Division of Anesthesiology, University of Colorado Medical Center, Denver, Colo.)

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### Major Vessel Damage in Lumbar Disk Operation

The operative removal of herniated nucleus pulposus is an established procedure in selected cases. As is true following any major operation, a certain percentage of complications can be anticipated. One such complication, probably occurring more often than is recorded in the literature, is accidental injury of the common iliac artery. This might be anticipated, considering the relatively contiguous position of the anterior surface of the lumbar vertebrae, especially at the intervertebral space between the fourth and fifth lumbar vertebrae and between the fifth lumbar vertebra and the first sacral vertebra, and the vessels surrounding the aortic bifurcation. Another anatomic relationship of significance is the relative stability of the great vessels in the retroperitoneal space. This prevents their displacement, without potential injury, by instruments passing through the intervertebral space.

Simple awareness of this potential danger is not sufficient. Holscher reported perforation of the common iliac artery and vein while cognizant of the possibility and making a determined effort to avoid it. He cited 4 other such cases with vascular damage, the outcome, in the majority, being fatal. The authors are aware of 3 unreported incidences of common iliac artery injury and 1 of inferior vena caval injury attending operation for herniated lumbar disk. Two such vascular complications were treated by the authors within the last 2 years and are reported. The authors' object is to present and discuss the interesting vascular problems created and to re-emphasize the ever-present danger of this complication.

Although recognition of vascular complications cannot be overemphasized, proper management is also of paramount importance. When such a lesion is suspected and confirmed by evidence of impending vascular collapse and continued retroperitoneal bleeding, immediate operation is indicated. The location of the damaged segment can usually be anticipated in the iliac artery several centimeters from the aortic bifurcation. Further isolation as to the involved side may be more difficult. Therefore, a low transverse transabdominal approach should be employed to secure adequate exposure. Restoration of blood volume can be rapidly performed by intra-arterial transfusion of whole blood directly into the aorta. Blood flow through the damaged segment of vessel can be prevented by controls with umbilical tape above and below the injured area. Every attempt should be made to restore the arterial continuity. Because the arterial tear is usually quite small, simple repair can be performed using either a continuous or interrupted everting mattress suture of 00000 arterial silk.



Immediate operation with vascular repair in 1 case was not only life-saving, but resulted in a functionally viable limb. Delayed operation in the other case resulted in prolonged hospitalization, repeated surgical procedures, and permanent nerve damage, the result of aneurysmal pressure.

The lesions were located within 2 to 3 cm. of the aortic bifurcation and followed exploration of the fourth-fifth lumbar intervertebral space. Both patients were salvaged by heroic surgery, but not without partial disability, one with residuals of hepatitis following multiple blood transfusions, and one with femoral nerve palsy and arterial insufficiency as a result of false aneurysmal formation and what was believed to be a breakdown in the homologous arterial graft.

The relational anatomy of the lumbar vertebrae and contiguous major vessels is described and correlated with the potential types of vascular complications. Operation at the fourth-fifth lumbar intervertebral space and use of the pituitary rongeur are emphasized as being most commonly associated with these lesions.

Immediate transabdominal exploration and arterial repair are recommended when this condition is confirmed or seriously suspected. (Surgery, Mar. 1954, Brig. Gen. S.F. Seeley, MC, USA, Lt. Col. C.W. Hughes, MC, USA, and Maj. E.J. Jahnke, Jr., MC, USA; Walter Reed Army Hospital, Washington 12, D.C.)

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### Acrylic Implants in Mandible Reconstruction

The more recent advances in surgical technique, blood replacement, anesthesia, and antibiotics have made possible an increasingly effective attack on malignant diseases. This is especially true in surgery of the head and neck where a greater variety of malignant lesions have become more approachable. But this very accessibility has aggravated the major drawback to the expansion of this field, namely the cosmetic and functional deformity which is the concomitant of wide surgical removal. The reluctance of the lay public and a large segment of the medical profession to accept such deformity has frequently led to the adoption of substitute therapies such as irradiation or limited surgery in situations in which these modalities may not have constituted the treatment of choice. Although the primary goal must always be cure of the disease, nevertheless, the surgeon must make every effort to minimize cosmetic and functional deformity.

There is a large group of cases in which surgical resection of a segment of the mandible is a prerequisite to the best possible prognosis. It is most often this same group in whom the ultimate structural and functional result is the least satisfactory. During the war years considerable experience was gained in the management and restoration of traumatic loss

of portions of the mandible. Almost all of these methods, however, have the disadvantage of requiring multiple-staged procedures which are time-consuming and, for the average civilian patient, economically unfeasible. For the patient with a cancer, where life expectancy is markedly shortened, it is all the more important to develop techniques of restoration to a comfortable and useful existence in the shortest possible time. From the standpoint of anatomy and physiology the ideal time for reconstruction is at resection, before soft tissue contractures and cicatrization have occurred. It would appear, therefore, that if a technique could be developed to accomplish such immediate restoration, the problems of morbidity and deformity would be greatly alleviated. The authors propose, in this article, to record their experiences which indicate that, in selected cases, such reconstruction is feasible.

In properly selected cases, immediate restoration of the surgically resected mandible by means of an acrylic prosthesis appears to be both feasible and desirable. With the assistance of any well-trained prosthodontist and a dental technician, the production and implantation of an acrylic prosthesis are within the reach of any general surgeon who performs radical surgery of the head and neck. No special facilities are required other than those normally found in the average dental laboratory. Whenever there are sound articulating teeth on the contralateral side, the use of a guide plane is considered advisable to assist in the continued maintenance of articulation and the prevention of mandibular drift.

The authors' experience indicates that restoration of the lateral segments of the mandible, including replacement of the temporomandibular joint, can be expected to give uniformly satisfactory results, both cosmetic and functional. Immediate restoration of facial contour was of immense psychologic benefit to patients who would otherwise be confronted with the serious problem of deformity. Talking or swallowing were not impaired beyond the loss occasioned by surgical resection. Actually, the implant enhanced the remaining functional capacity by stabilizing the mandibular fragment and affording a new site for muscle insertion. In no cases was temporomandibular joint pain noted except for a transient episode in 1 patient which was promptly corrected by adjustment of the guide plane. In all cases the ability to chew was limited only by the extent of remaining dentition. All were able to eat soft foods, and 2 more venturesome patients resumed a normal diet without apparent harm.

On the contrary, the authors' experience with replacement of the anterior segment of the mandible was less than satisfactory. In all 3 cases reported the prosthesis eventually became exposed either through the skin of the midline of the chin or along the intraoral suture line. In each instance it was necessary to remove substantially large amounts of the musculature of the tongue and floor of the mouth. It is the authors' belief that the resultant tension and scar tissue contracture is responsible for the gradual production of pressure on the overlying skin or mucous membrane,



which eventually causes necrosis and breakdown. The authors believe, however, that the technique would be suitable for cases in which simple resection of the mandible is indicated without the loss of the surrounding soft tissues. In such a situation the implantation of the prosthesis is a simple technical matter and should result in prolonged maintenance of jaw function and facial contour. Simple dehiscence of the mucous membrane should not necessarily require removal of the prosthesis and efforts should be made to free the flaps, close the dead space, and resuture the mucosa. If breakdown of the skin occurs, sliding flaps should be attempted, and if not successful, a tubed pedicle graft may be used to cover the defect. (Surg., Gynec. & Obst., Apr. 1954, M. J. Healy, Jr., M.D., J. L. Sudbay, M.D., H. H. Niebel, D.D.S., B. M. Hoffman, D.D.S., and M. K. Duval, M.D.; Veterans Hospital, Bronx, N. Y.)

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#### Enzymatic Debridement for Pelvic Abscesses

In 1952, a preliminary report was published on the use of streptokinase and streptodornase in pelvic abscesses. The methods and results in 11 cases on the Tulane Gynecological Service at Charity Hospital in New Orleans in which streptokinase and streptodornase had been used as an integral part of the management of this condition were discussed in that article.

In the present article the authors present the results in a greater number of similar cases and the follow-up studies on these patients to date, as well as a comparison of the valuation of treatment in a similar number of cases treated by the older and universally accepted method of management, described by Crossen.

The results extensively reported in the literature on the use of streptokinase-streptodornase (SK-SD) in surgical conditions in which lysis of fibrin clots and the breakdown of fibers formed by desoxyribonucleoprotein in purulent exudates were so successful that the authors were prompted to investigate its use and efficiency in the treatment of cul-de-sac and tubo-ovarian abscesses that are directly accessible through the posterior fornix of the vagina.

SK-SD was used in this hospital as a means of medical debridement in suppurating superficial wounds, incisional hematomas, cuff abscesses, and hematomas. The results were generally good and compared favorably with those reported elsewhere in the literature.

The results that the authors expected to obtain on the basis of their previous experience and those of many investigators in other fields of surgery and medicine were as follows: decrease in the viscosity of the purulent material; reduction of hospital days as compared to the older method; more complete evacuation with resultant decrease in recurrences and formation of

adhesions; reduction of definitive surgery, such as hysterectomy and bilateral salpingo-oophorectomy. Because many of these patients were in the age group of 20 to early 30, the later result, if obtained, would be a marked improvement over previous treatment.

The material for the substance of this report was obtained from two separate series of cases from the Tulane Gynecological Service of Charity Hospital at New Orleans. The first, including those in the preliminary report, was made up of 28 cases of pelvic abscess, 16 of which were cul-de-sac abscesses and 12 tubo-ovarian abscesses that presented an accessible mass in the cul-de-sac. In all of these cases colpotomy and the administration of SK-SD constituted the treatment used, and this group will be referred to as the SK-SD series. The races represented were white (1) and colored (27), and the age distribution was from 17 to 63 years.

The second series used for comparison was made up of patients treated by the same methods except that SK-SD was not employed and the large 3 cm. colpotomy tube was utilized. This group consisted of 28 patients, 14 with cul-de-sac abscesses and 14 with tubo-ovarian abscesses, and is retroconsecutive to 1 July 1951 when the SK-SD series was begun. This series included 4 white patients and 24 colored patients and their ages were distributed from the late teens to 64 years. This group will be referred to as the colpotomy without SK-SD series.

Enzymatic debridement by the use of SK-SD has been found to be an adjuvant to drainage in the treatment of pelvic abscesses. The action and results in this entity compare favorably with those reported in the literature on the use of SK-SD in other parts of the body.

The results were compared with those in a similar group of patients treated by the same methods and antibiotics with the exception of the use of SK-SD, and it was found that the group that had SK-SD injections at the time of centesis of the cul-de-sac and irrigation through the smaller 1-cm. T-tube following colpotomy responded with a more complete evacuation of the abscess in a shorter period of hospitalization. Thus the formation of excessive granulation tissue and adhesions was prevented and the uterus and adnexa were allowed to return to a more normal state in the pelvis which, in turn, obviated the need for definitive surgery. The action of SK-SD in reducing the barrier between the humoral and cellular elements, allowing the increase in phagocytosis and the accessibility of the specific antibiotics, has to date reduced the recurrence of the disease by increasing the sterility of the tissue involved.

The scope of cul-de-sac puncture as a diagnostic aid was increased by its use in any true cul-de-sac mass. Many condemn its indiscriminate use, but on the Tulane service it has yet to be seen as provoking any immediate or late complications when it was used as a true cul-de-sac diagnostic aid. Its value lies in the fact that it is a simple procedure which can be carried out in the examining room or the physician's office without anes-



thetia, and in the fact that it can be used as a procurer of material for the differential diagnosis of many pelvic conditions other than ectopic pregnancy.

It has been reported that SK-SD when injected into empyema cavities and other large abscess pockets caused an immediate thermal reaction. This reaction was not observed in the authors' study, nor was any normal tissue affected by the SK-SD as far as could be observed. The fact that 2 patients in the group became pregnant and delivered normal infants substantiates this conclusion. (Surg., Gynec. & Obst., Apr. 1954, C.G. Collins, M.D., R.G. Burman, M.D., and G.W. Tucker, M.D.; The Tulane University of Louisiana School of Medicine, New Orleans, La.)

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#### Use of Hyaluronidase

In disorders of the bones and joints, as in all other special fields of medicine, many primary conditions exist for which there is no definitive treatment, and also many troublesome complications are encountered that add to the difficulties of operation. During a clinical evaluation of hyaluronidase over the past 3 years, it became apparent that the enzyme might prove useful not only for rapid elimination of the extracellular fluid accumulations (edema, hematoma, hemarthrosis) that frequently complicate orthopedic conditions and delay operative treatment, but also for specific therapy or prophylaxis in certain surgical problems for which no satisfactory measures heretofore have been available.

The value of hyaluronidase as a useful adjunct in the treatment of fractures and other bone injuries was stressed in an earlier report. It seems apparent that hyaluronidase will find even greater usefulness through its ability to reduce soft-tissue swelling particularly as it relates to the problems of soft-tissue trauma and hemorrhage, impending Volkmann's ischemic contracture, and acute hemophilic hemarthroses and hematomata.

Trauma to soft tissues may result in considerable hemorrhage and swelling and if accompanied by fracture, as for example about the ankle joint, will often delay definitive treatment or complicate the result by increasing the likelihood of skin breakdown or wound infection.

Injection of 1,500 TRU of hyaluronidase into multiple sites about such a swollen ankle, with the use of an elastic bandage, has proved its efficacy on many occasions and will continue to do so if used early in adequate doses and if combined with pressure.

Soft-tissue hemorrhage alone may be a troublesome and sometimes disabling complication, particularly when surgical evaluation is impossible or impracticable. Hyaluronidase has proved itself to be a specific therapeutic agent where formerly none existed for this particular problem.

An impending Volkmann ischemic contracture is a true orthopedic emergency and demands immediate treatment if disastrous consequences

are to be averted. Dissipation of soft-tissue edema and hematoma is of the utmost importance in the prevention and treatment of the early Volkmann lesion. This complication most frequently follows supracondylar fracture of the humerus. The problem of a severe supracondylar fracture of the elbow and the ever-present concern for adequate reduction without circulatory impairment are common. The mixture of hyaluronidase and procaine offers an effective nonoperative method to relieve the subfascial tension caused by edema and hemorrhage with great rapidity. During the initial study period of this enzyme at the New York Orthopaedic Hospital, the authors had the opportunity of successfully treating with hyaluronidase 2 fresh supracondylar fractures that were complicated by impairment of the distal circulation due to subfascial tension caused by edema and hemorrhage.

Although less common than supracondylar fracture, other types of forearm trauma may be complicated by a Volkmann ischemic contracture.

As the authors reported elsewhere in greater detail, hyaluronidase has found one of its most important uses in the treatment of acute hemophilic hemarthrosis. The authors believe the intra-articular injection of hyaluronidase combined with pressure to be the treatment of choice in these problem cases. Their criteria for a successful result include complete absence of pain and restoration of the previous range of motion in 48 hours.

Early return of the customary range of motion precludes stiffening of the involved joint. Even more important, perhaps, is rapid restoration of a normal synovial fluid; thus re-establishment of adequate nutrition to the articular cartilage forestalls the degenerative changes that inevitably lead to crippling arthritis. Comparison of the response to treatment by injection of hyaluronidase with the results obtained with earlier methods in the same joint in the same patient shows that recovery is not only more rapid after the injection of hyaluronidase but also more nearly complete.

It must be borne in mind that hyaluronidase is solely a dispersing agent. It has no coagulating effect and will not stop active bleeding in these joints. The authors rely on fresh whole blood or lyophilized plasma and clinical observation of the patient to determine when active bleeding has ceased. When this state has been reached, then hyaluronidase is used to clean out the joint cavity. It has been the authors' experience that the best results are obtained if treatment is instituted during the 48 hours following subsidence of active bleeding. The results are equivocal in cases of hemarthrosis of 1 week or longer in duration. In none of the authors' cases to date has the use of hyaluronidase shown any tendency to increase bleeding within the joint, nor have the authors had any trouble with bleeding from the needle puncture site.

At present the combined series from Presbyterian and Jefferson Hospitals comprise 29 acute hemophilic hemarthroses treated with hyaluronidase. In 10 cases the ankle joint was involved, in 10 the elbow, in 6 the knee, and in 3 the shoulder. In 26 cases pain was completely relieved and normal range of motion restored in 48 hours. In 3 patients the treatment failed for technical reasons in which the action of the enzyme had no part.



Seven patients with disabling symptoms from large hemophilic hematomata also have been successfully treated with hyaluronidase in this series. The authors are convinced that the use of hyaluronidase is one of the most important advances in the management of acute hemophilic hemarthrosis and feel sure that early restoration of painless motion by this treatment will be a definite aid to the prevention or postponement of permanent deformity. (Arch. Surg., Mar. 1954, J. J. Gartland, M. D. and W. R. MacAusland, Jr., M. D.; New York Orthopaedic Hospital and Columbia Presbyterian Medical Center, New York, N. Y., and Jefferson Hospital, Philadelphia, Pa.)

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#### Training Course in Cold Weather Medicine

A course of training in cold weather medicine is now being organized for a limited number of medical officers of the Regular Navy in the rank of Lieutenant Commander and below. Applications are currently desired from officers in this category who may be interested in training embracing both research and development and the operational phases of this specialty.

The course will consist of several parts, beginning with a period of indoctrination and orientation at the Bureau of Medicine and Surgery and at the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md., where opportunities will be available for general familiarization with the military and medical research projects and the administration and operational phases of the cold weather program throughout the Armed Services. This will be followed by periods of indoctrination at the Cold Weather Research Laboratory, Bridgeport, Calif., at Fort Churchill, Canada, and other activities. In addition a 6-weeks' formal course of instruction in Arctic Environment at McGill University will be offered and an appropriate course in physiology and pathology dealing primarily with those phases of these subjects related to cold weather problems.

Upon completion of the course of training of approximately 1-year's duration, graduates will be assigned, in turn, to specific research and development activities, to the Bureau of Medicine and Surgery, and to the Naval Medical Research Institute, Bethesda, Md., for general coordination of the Navy cold weather program and to various appropriate ships or stations for normal periods of required sea duty. Rotation between duty stations, insofar as is practicable, will be accomplished to train and maintain a number of experts in cold weather medicine within the Regular Medical Corps.

It is the desire of the Bureau of Medicine and Surgery to augment participation of the Medical Department in the general cold weather program of the Navy. In order to accomplish this and to give the program continuity and direction, this plan of providing medical officers sufficiently well trained in all phases of the subject to advise, investigate, develop, administer, and

coordinate matters pertaining to military aspects of cold weather medicine is being adopted. Cold weather medicine promises an interesting and absorbing pursuit with many opportunities to make significant contributions to military medicine at a time when increasing emphasis is being given to problems involved in cold weather operations.

Applications for this course should be made by official correspondence to the Chief of the Bureau of Medicine and Surgery, enclosing the following service agreement: "I agree to remain in the Regular Navy for nine months following the period of service for which I am currently obligated, or for eighteen months following completion of this course, whichever is longer." (Cold Weather Medicine Branch, BuMed)

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#### New Toothbrush Holder Available for Use in Ships

A toothbrush holder has been adopted as a standard part of crews' clothes lockers on new naval vessels. In addition, the holders have been made a General Stores Item so that vessels already in service can requisition it and install it with ships forces in accordance with hull type drawing BuShips No. S3306-860191 Alt. H. The holder is made of sheet metal and is approximately 3 inches long and 1 inch wide. It is perforated by 3 oval holes, each of which will accommodate a toothbrush handle. The holder is listed in the Standard Stock Catalog as "Toothbrush Rack, G42-R133-1250".

The new toothbrush holder was designed by Captain M. M. Maxwell (DC) USN, to furnish a convenient and sanitary place where each man can stow and dry his toothbrush or toothbrushes. (DentDiv, BuMed) See also BuMed Notice 6750 dated 31 Mar 1954.

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#### Board Certifications

##### American Board of Anesthesiology

LT John J. Leahy (MC) USNR (Inact.)

##### American Board of Dermatology and Syphilology

CDR Samuel H. Horton, Jr. (MC) USN

##### American Board of Internal Medicine

LT Arthur J. Draper (MC) USNR (Inact.)

LTJG Carl C. Jones (MC) USNR (Inact.)

##### American Board of Obstetrics and Gynecology

LT Joseph W. Pilkington (MC) USNR (Inact.)



American Board of Orthopedic Surgery

CDR David J. Henry (MC) USNR (Inact.)

American Board of Otolaryngology

LT Daniel C. Montgomery, Jr. (MC) USNR (Inact.)

American Board of Pathology

LTJG Hamil Murray (MC) USNR (Inact.)

American Board of Pediatrics

LT Vincent J. Fontana (MC) USNR

LT Robert M. Hidey (MC) USNR

LT Francies Marshall (MC) USN

American Board of Psychiatry and Neurology

LT Howard P. Krieger (MC) USNR (Neurology)

LT Claude H. Miller, Jr. (MC) USNR (Inact.)

LCDR Joseph "B" Parker (MC) USNR (Inact.)

LT John A. Stroud (MC) USNR (Psychiatry)

American Board of Radiology

LT James L. Clements (MC) USNR (Inact.)

LTJG John W. Compton (MC) USNR (Inact.)

American Board of Surgery

LT Wallace C. Bedell (MC) USNR

CDR Ferdinand V. Berley (MC) USN

CDR John R. Bierley (MC) USN

LT John C. Calhoun, Jr. (MC) USNR

CDR Quentin J. Florence (MC) USN

LT David M. Hume (MC) USNR

LT Guy O. Keller (MC) USNR

LTJG Roy D. McClure (MC) USNR (Inact.)

LCDR Robert S. Morris (MC) USNR (Inact.)

American Board of Thoracic Surgery

LT Richard T. Myers (MC) USNR (Inact.)

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Captain Klein Awarded Air Medal

Through an oversight, the last edition of the Aviation Supplement failed to include the award to Captain Warren E. Klein (MC) USN of the Air Medal "For meritorious achievement in aerial flight as Senior Medical Officer, attached to the First Marine Aircraft Wing, in connection with operations

against enemy aggressor forces in Korea from 20 October 1951 to 2 August 1952. Completing twenty missions during this period, Captain Klein participated in daring flights to evacuate wounded personnel from front-line positions to adequate medical facilities. His professional skill, courage and devotion to duty in the face of grave hazards were in keeping with the highest traditions of the United States Naval Service."

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#### Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.

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#### From the Note Book

1. CORRECTION. Item 15 on page 29 of Vol. 23, No. 7 concerning a study of ototoxicity from intermittent streptomycin sulfate therapy of pulmonary tuberculosis appears in the January 1954 issue of the Archives of Otolaryngology and not in the Archives of Ophthalmology as stated.

2. Rear Admiral Lamont Pugh (MC) USN, Surgeon General of the Navy, addressed a Combined Meeting of the Board of Governors and the Board of Regents of the American College of Physicians, 4 Apr 1954, in Chicago, Ill. Admiral Pugh, a Fellow and a Governor of the College, discussed Navy Medicine; its close relationship with the practice of civilian medicine; the coordination of the Navy's intern and resident training programs with the standards set for civilian medical training programs; and the importance to Navy Medicine of the postgraduate and residency training programs conducted in Naval Hospitals. (TIO, BuMed)

3. The third annual conference of Medical Department finance and administrative officers was held at the National Naval Medical Center, Bethesda, Md., on 7, 8, and 9 Apr 1954. Temporary additional duty orders were originated in the Bureau for those officers nominated to attend, and travel costs were chargeable to a Bureau allotment. It was necessary to limit nominations to finance officers of major continental BuMed managed activities and to those officers serving as administrative or executive assistants to medical and dental officers attached to the Headquarters of continental Naval Districts. However, a summary of the questions raised at the panel discussions and the answers given thereto will be made available to those Medical Service Corps and Hospital Corps officers who were unable to attend the conference. (ComptDiv, BuMed)



4. The Navy Medical Department will conduct the Eighth Interagency Institute for Federal Hospital Administrators and Executives which will be held during the period 20 April through 7 May 1954 at the National Naval Medical Center, Bethesda, Md. The Institute, under the auspices of the Interagency Committee on Training and Education of Federal Hospital Administrative Personnel, is an advanced postgraduate course of instruction and is not a basic course in hospital administration. Student participants in the Institute, all active duty officers or government employees, will include: 6 each from the Army, Navy, and Air Force; 12 from the Veterans Administration; 3 from the Public Health Service; and 3 from the Bureau of Indian Affairs. (TIO, BuMed)
5. On 2 Apr 1954, Admiral Pugh addressed a meeting of the Reserve Consultants to the Bureau of Medicine and Surgery in the Board Room, National Naval Medical Center, Bethesda, Md. The Reserve Consultants are appointed by the Surgeon General to advise him on matters pertaining to the Postgraduate Medical Training Program of the Navy's Medical Department. This program is designed to provide training which will prepare Navy physicians and dentists to meet the high professional standards established by the various American specialty boards. (TIO, BuMed)
6. The Secretary of the Navy, by SecNav Notice 5450 of 9 Mar 1954, established a Naval Dental Clinic at Norfolk, Va. The mission of this activity is to provide complete dental services to those fleet units and shore activities in the Norfolk area which have no dental facilities, and to provide prosthetic dental service to units and facilities without prosthetic laboratories. (TIO, BuMed)
7. The San Francisco Dental Society sponsored a Navy Day for Dentists in honor of Rear Admiral H. Paul Riebe (DC) USN, at the Naval Station, Treasure Island, Calif., on 5 Apr 1954. (TIO, BuMed)
8. Twenty-one dental officers have been selected for residency and specialized training in naval activities by the Dental Training Committee which met in the Bureau of Medicine and Surgery in March. (TIO, BuMed)
9. LCDR Kim Man Soo, Chief of the Dental Corps of the Republic of Korea Navy reported for postgraduate instruction at the Naval Dental School, NNMC, Bethesda, Md., on 2 Apr 1954. LCDR Kim is being sponsored for this instruction by the Naval Advisory Group to the Republic of Korea Navy. He will receive instruction in oral surgery and in dental administration. (TIO, BuMed)
10. The "Directory of Commercial and College Laboratories," hitherto compiled and published by the National Bureau of Standards of the U.S.

Department of Commerce, will be published in the future by the American Society for Testing Materials. (NBS, Dept. of Commerce)

11. Thirteen electrical devices which have been widely distributed for the diagnosis and treatment of serious diseases were barred from shipment in interstate commerce by an injunction decree entered 16 Mar in the Federal District Court at San Francisco. (FDA, Dept. H. E. W.)

12. An underwater television system of enormous potential value to science, commerce, and military and naval operations has recently been developed by the National Research Council of Canada, Ottawa. Self-propelled, and substantially lighter than earlier units, this new "remote-eye" system holds promise as an extremely valuable tool for safe underwater exploration of harbor, lake, and river bottoms, and the shallower ocean waters. (Tech. Reports Newsletter, Dept. of Commerce)

13. A program of preoperative bowel preparation combining mechanical cleansing with large doses of Neomycin and phthalylsulfathiazole for 24 hours was employed in 55 patients. The regimen appears to be an effective method for bowel preparation. (Arch. Surg., Mar. 1954, H. E. Bacon, M. D., E. J. Lowell, Jr., M. D., E. H. Spaulding, M. D., N. U. Rao, Ph. D., and H. D. Trimpi; Temple University Hospital, Philadelphia, Pa.)

14. The results of 200 penetrating scleral resection operations performed in cases of idiopathic or post-traumatic retinal detachment are evaluated in the Archives of Ophthalmology for March 1954 by P. C. Kronfeld, M. D., and D. K. Pischel, M. D.; University of Illinois; Stanford University School of Medicine.

15. Resection is probably the therapy of choice in selected chronic localized pulmonary fungous infections that remain after specific therapy or for which there is no effective therapy. (Dis. Chest, Mar. 1954, F. A. Hughes, M. D., H. W. Whitaker, M. D., C. C. Lowry, M. D., J. W. Polk, M. D., F. E. Foley, M. D., and J. R. Fox, M. D.; Kennedy Hospital, Memphis, Tenn.)

16. The main problem in regeneration of the central nervous system in adult mammals lies in the apparently limited capacity of the neuron itself to survive injury and subsequently to show vigorous and active growth. (J. Internat. Coll. Surgeons, Feb. 1954, W. W. Chambers, Ph. D.; University of Pennsylvania School of Medicine, Philadelphia, Pa.)

17. Seventy-three patients with pilonidal disease treated by a modification of Buie's marsupialization operation are reported in the Annals of Surgery for March 1954 by D. J. Abramson, M. D. and Maj. P. A. Cox, USAF(MC) of Washington, D. C.



BUMED NOTICE 6320

16 Mar 1954

From: Chief, Bureau of Medicine and Surgery  
To: All Naval Hospitals, Except Yokosuka  
U.S. Naval Dispensaries  
All Continental Stations Having Infirmaries or Dispensaries  
Subj: BuMed Instruction 6320.13 CH 1; Report of Staffing Ratios at  
Medical Treatment Facilities (Report Symbol DD-OMS-3)

This notice promulgates Change 1, pen-and-ink changes, to BuMed Instruction 6320.13.

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BUMED NOTICE 4410

16 Mar 1954

From: Chief, Bureau of Medicine and Surgery  
To: Ships and Stations Having Medical/Dental Personnel Regularly  
Assigned  
Subj: Conversion of medical and dental material to the Federal Catalog  
numbering system; plans for  
Ref: (a) ONMInst 4410.24 of 6 Jan 1954  
Encl: (1) Plan for Conversion of Medical and Dental Material to The  
Federal Catalog Stock Numbering System  
(2) Copy of Armed Services Medical Stock List (to replace Armed  
Services Catalog of Medical Materiel)

This notice effects conversion of medical and dental material from the present Armed Services Catalog of Medical Materiel stock numbering system to the Federal stock numbering system, in accordance with reference (a).

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BUMED NOTICE 7303

18 Mar 1954

From: Chief, Bureau of Medicine and Surgery  
To: Activities Under the Management Control of BuMed  
Chief of Naval Operations  
Chiefs of Bureaus

Subj: Expenditures in fiscal years 1954 and 1955

Ref: (a) BuMed Inst. 7303.5

This notice brings to the attention of addressees certain restrictions that have been placed on expenditures during fiscal years 1954 and 1955.

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BUMED INSTRUCTION 7300.2

18 Mar 1954

From: Chief, Bureau of Medicine and Surgery

To: All Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Reimbursement to the appropriation Medical Care, Navy; accounting data for effecting

Ref: (a) Art. 24-30, ManMedDept  
(b) Art. 24-31, ManMedDept  
(c) Par. 024195, NavComptMan

This instruction emphasizes the accounting data required on accounting documents, when funds are deposited for credit to the appropriation, Medical Care, Navy, by field activities.

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BUMED NOTICE 6630

19 Mar 1954

From: Chief, Bureau of Medicine and Surgery

To: All Continental Activities Having Dental Prosthetic Facilities

Subj: Artificial teeth; procurement of

This notice provides advance notice of a change in the method of procurement of artificial teeth to supplement the assortments. BuMed Inst. 6630.1 of 4 Nov 1952 is cancelled.

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BUMED INSTRUCTION 6010.5

26 Mar 1954

From: Chief, Bureau of Medicine and Surgery

To: All Naval Hospitals and Stations Having Infirmaries



Subj: Uncollectible accounts receivable

Ref: (a) Art. 24-30(2), ManMedDept  
(b) BuMed Inst. 6010.2A  
(c) BuPers Inst. 1620.2  
(d) Ch. 15, Pt. E, Vol. I, MarCorpsMan  
(e) Par. 033016-2b(1), NavComptMan

This instruction prescribes a uniform policy and procedure to be followed by addressees (1) for attempting collection of unpaid accounts, without recourse to law, (2) for reporting to the Bureau of Medicine and Surgery, those accounts determined uncollectible through means available to the facility, and (3) for removing from the formal accounting records of the facility, accounts determined uncollectible.

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BUMED NOTICE 7100

30 Mar 1954

From: Chief, Bureau of Medicine and Surgery  
To: Activities Under the Management Control and Financial Responsibility of BuMed

Subj: Fiscal Year 1956 requirements for ambulances, special medical and non-passenger carrying vehicles; materials handling equipment; and construction, fire fighting, utility and weight handling equipment

Ref: (a) Appendix A and B, Technical Publication NavDocks TP-Tr-1 of 15 June 1953  
(b) BuMed Inst. 10490.1

Encl: (1) Sample Format

This notice requests field activity replacement and augmentation requirements for subject vehicles and equipment for use in planning and preparation of the Bureau of Medicine and Surgery FY 1956 budget estimates; and requests detailed justification in support of present allowances. This data is necessary to assist this Bureau in support of its position during budgetary hearings.

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BUMED NOTICE 7100

31 Mar 1954

From: Chief, Bureau of Medicine and Surgery

To: All Navy and Marine Corps activities (other than BuMed managed activities) having a BuMed ambulance allowance

Subj: Fiscal Year 1956 requirements for ambulances

Ref: (a) Appendix A, BuDocks Technical Publication NavDocks  
TP-Tr-1 of 15 June 1953

Encl: (1) Sample Format

This notice desires ambulance replacement and augmentation requirements from field activities for use in planning and preparation of the Bureau of Medicine and Surgery FY 1956 budget estimates, and requests detailed justification in support of present allowances. This data is necessary to assist this Bureau in support of its position during budgetary hearings.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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#### AVIATION MEDICINE DIVISION



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#### Aviation Physiology Training

With the diminishing numbers of medical officers at naval air stations, due to the cutback ordered by the Office of the Secretary of Defense, the burden of aviation physiology training becomes centered more and more on the aviation physiologist, Medical Service Corps officer.

It is imperative that the services of the aviation physiologist be utilized to the fullest extent in order that the mission of the Medical Department be fully accomplished. All too often the Medical Service Corps officer is saddled with a multitude of small, insignificant, and wholly irrelevant time-consuming duties--duties such as Sanitation Officer, Insurance Officer, War Bonds Sales Officer, and, in one instance, Assistant Paymaster



to the troops. This diversion of the physiologist from his originally intended duties is not only detrimental to the program but materially affects the morale of the officer so assigned.

The duties of the aviation physiology officer are not limited solely to the low pressure chamber, night vision trainer, and the ejection seat trainer. In fact, he is expected to visit squadron areas and personnel and lecture to designated groups on such topics as first aid, abandon ship, survival, use of emergency and safety equipment, et cetera. He should work along with squadron survival and safety officers in seeing that adequate and up-to-date equipment is available and properly stowed.

Any aviation physiologist interested in his work will readily busy himself with these duties thereby obviating the necessity of the senior medical officer's assigning all the unwanted tasks to him in order to keep him busy.

At the present time, there is a shortage of aviation physiologists who are available for the training of pilots and aircrewmembers. It is planned that the procurement of new Medical Service Corps officers will end the shortage and fill all now vacant billets. However, it is extremely difficult to justify a request for these much needed officers when those who are presently at this work are assigned duties that can well be done by nonprofessional line officers.

It is desired that the aviation physiologist be utilized to the greatest extent within his specialty. The knowledge of aviation physiology and the use of airborne personnel equipment is becoming more and more necessary to the pilot and crew of high-speed, high-performance aircraft. It is the mission of the Medical Department to teach and train Navy aviation personnel in the use of this equipment. Hardly a day passes during the review of aircraft accidents that someone fails to question the thoroughness of the aviation physiology training program. Many of the unexplained aircraft accidents have been blamed on the lack of knowledge on the part of the pilot concerning his oxygen equipment or his ejection seat equipment, et cetera.

The aviation physiology training program is only as good as the senior medical officer aboard each air station makes it. He must utilize his aviation physiologist to the fullest extent. If he needs help, then help him, but don't hinder him by giving him or permitting him to be assigned duty wholly foreign to his specialty.

\* \* \* \* \*

### Oxygen Equipment Under Water

The following is a report of studies completed at the U.S. Naval School of Aviation Medicine, NAS, Pensacola, Fla., in the use of standard naval aviation equipment for underwater survival:

"Without auxiliary breathing equipment a man submerged under water cannot survive more than a few minutes. Consequently, any means of fur-

nishing oxygen to aircraft pilots involved in water landings in land airplanes would increase the time available for underwater escape, survival or rescue, and ultimately save lives. Kulesz in 1945 (1) reported the possible use of portable aviation oxygen equipment for coming to the surface from submerged aircraft. Standard Army Air Force portable oxygen equipment of that time (type A-13 demand regulator, type D-2 cylinder, and A-14 mask) was used successfully to "escape" from a mock-up B-24 airplane submerged in 6 feet of water. Other studies have shown that breathing pure oxygen under water at depths as great as 40 feet is well tolerated by man for one-half hour (2). Longer exposures or exposure at greater depths while breathing 100% oxygen, might result in oxygen poisoning of varying severity.

"Because the diluter demand type regulators and the oxygen masks used in naval aviation theoretically should operate under water, the most common types of naval aviation oxygen equipment were tested. What follows represents an evaluation of their use in underwater survival.

"Two types of standard naval aviation oxygen regulators (diluter off) were attached to an airplane seat. A man in the seat was lowered over the side of a boat by means of a block and tackle. Each of 8 subjects was tested twice, being lowered to a depth of 33 feet on one occasion and 65 feet on another. Various combinations of A-13 (pressure breathing) and A-14 (demand) masks with Eclipse-Pioneer oxygen regulators 2858-B1 (diluter demand) and 2862-C1 (automatic positive pressure) were used. The H-2 (bail-out) oxygen cylinder was used with an A-13 mask by one subject.

"All possible attitudes of the seated body in relation to the surface of the water were made (inverted, prone, et cetera) by means of lines attached to the bottom of the seat. The depth of the regulator under water compared to the depth of the subject's body was varied by shifting the regulator up and down the back of the seat.

"The A-14 and A-13 oxygen masks in any combination with the 2858-B1 or 2862-C1 regulators operated satisfactorily for all subjects with any body attitude at depths up to 65 feet, the maximum depth tested. The ideal position of the regulator in relation to the subject's body was at the level or slightly above the tracheal bifurcation. If the regulator was at the same level, there was no pressure differential. If the regulator was higher than the bifurcation, a negative pressure, in inches of water pressure, was present in the mask corresponding to the number of inches the regulator was above the bifurcation. If the regulator was lower, the pressure was positive.

"The H-2 bail-out oxygen cylinder was not satisfactory under water. This cylinder delivers oxygen under constant flow. The volume of the oxygen line from the cylinder to the mask is so small that a full inspiration reduces the pressure in the line to the extent that water is admitted through the one-way valve in the end of the oxygen mask hose.



"The average time a full 514 cu. in. oxygen cylinder sustained the subject at 33 feet (2 atmospheres) was 31-1/3 minutes. The duration would decrease slightly at greater depths and increase slightly at lesser depths. Efforts to increase duration by holding each inspiration to the maximum was of limited value because CO<sub>2</sub> increase rather than O<sub>2</sub> lack is the limiting factor.

"The A-13 pressure breathing oxygen mask is preferable to the A-14 if the regulator is delivering positive pressure because the pressure compensated valve of the A-13 mask will hold the pressure and prevent continuous flow through the mask. There is very little or no tendency for either mask to leak water inboard because the water pressure helps seal the mask to the face.

"A pilot who is about to make a water landing in a land airplane has a tendency to discard his oxygen equipment before hitting the water. If he cannot abandon the airplane before it sinks, either because it is mechanically impossible or because he is unconscious, the pilot probably will drown before effective aid can reach him. If normal escape is possible but he does not extricate himself before going under water, there is a tendency for him to become panic-stricken as the water rises over his head; such a mental state would further decrease his chances of coordinated effort to free himself.

"This study shows that if the pilot keeps his oxygen mask on and connected to his oxygen supply with his regulator on "diluter off" (100% oxygen) when a water landing is imminent, his oxygen equipment will protect him for an extended period if normal escape from the airplane is impossible for mechanical reasons (jammed canopy, et cetera) or if he loses consciousness on impact. If he is in shallow water (less than 100 feet) he would remain alive for an average of 31 minutes longer than without the oxygen, which would increase the chance of his being able to extricate himself or allow time for outside aid. If he lands in deeper water and normal escape is impossible, several more minutes would be available for escape while the airplane is sinking from the surface to excessive depths.

"Pilots and aircrewmen might be interested in knowing that standard naval aviation oxygen equipment operates under water.

"1. Kulesz, W.G.: Underwater use of portable oxygen equipment. The Air Surgeon's Bulletin, Vol. 2, No. 5, May 1945.

"2. Experimental Diving Unit, U.S. Naval Gun Factory, Washington, D.C.; ltr WW:hcd, Serial 151, dtd 3 November 1952."

At the present time all student pilots in the U.S. Navy training program are being indoctrinated in the use of oxygen equipment for emergency underwater survival and escape. It is advised that flight surgeons review this report with the commanding officers of the unit's flight personnel by lecture and/or demonstration if feasible. This information passed on to the pilots may save a life. Every little bit helps and it may mean the difference between life and death to someone in your outfit. (LCDR A. L. Hall (MSC) USN)

### Proper Adjustment of the A-13-A Mask

Three cases of apparent anoxia were observed by the author during the fall of 1953. One pilot was flying at 30,000 feet with the cockpit altitude of 18,000 feet in an F2H2 when he left the formation in a shallow glide and failed to respond to voice radio until he had reached 18,000 feet altitude, at which time he responded to insistent repeated calling of his first name followed by "dive brakes". Upon questioning by a flight surgeon after his return to the base the impression was gained that this pilot might have hyperventilated. However, when he was taken up in a low pressure chamber, it was found that his mask was poorly adjusted, allowing dilution by cockpit air. Following proper adjustment of the pilot's mask, a normal chamber run was made to 43,000 feet without incident. At 30,000 feet the pilot was encouraged to attempt hyperventilation and found that he could not hyperventilate. The conclusion is drawn that this pilot, because of maladjustment of the mask, excessively diluted his oxygen supply by aspirating cockpit air into the mask.

A second case was experienced by a pilot, commanding officer of a fighter squadron, who was flying at 40,000 feet in an F2H2 with the cockpit altitude of 23,000 feet. After 2 hours of flight during which time he had intermittently switched his regulator to 100% oxygen, he developed muscular aches in the left triceps both thighs and legs. He attributed this discomfort to cold. He then became light headed and observed a reduction of visual acuity which he attributed to reflection from the water as he was attempting to identify an island destination. Upon observing these signs he switched to 100% oxygen for the balance of the flight. He did not note improvement, but commenced his let-down and made a normal landing. He considered his symptoms as "slight" and would not have reported them except for the fact that another pilot in his squadron accomplishing the same cross-country flight about 1-1/2 hours earlier had encountered more serious symptoms of a similar nature and had reported to the Medical Department. Following an investigation of this incident and that of the other pilot, the investigating officer read BuAer Tech Ord 51-61 to all pilots of the squadron.

The third incident involves the second pilot mentioned in the above paragraph. As stated above he experienced more serious symptoms similar to those of his squadron commander and he further reported a "mental blackout" with a loss of altitude from 40,000 to 30,000 feet. This loss of altitude was observed by a flight leader.

It has been observed upon spot checking of jet pilots that approximately 50% of these pilots regard the wearing of the A-13-A mask as a purely personal matter and the adjustment as subject to their individual whims or desires.

One pilot reported for a low pressure chamber indoctrination wearing a mask so loosely that 2 fingers could be inserted between the chin and the mask.



The inference is obvious that flight surgeons have not been "selling" the pilots on proper technique in adjustment of masks and that some pilots are wearing their masks so loosely as to allow the entry of cockpit air to dilute the proper oxygen mixture beyond the point of safety.

BuAer Tech Ord 51-61 and OpNav Inst. 3740.3 are quite specific in delineating the responsibilities of flight surgeons in intermittent and indoctrination of pilots to insure that they wear the A-13-A mask properly. (CAPT W. E. Klein (MC) USN)

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### Flight Surgeons' Duties

The Air Force recently issued an amendment to its regulation, AFR 160-69 of 13 February 1951, in which the responsibility of the flight surgeon concerning personal and protective equipment is clearly outlined.

Two sections are quoted:

"9. Personal and protective equipment. --Flight surgeons will render professional advice and technical assistance in connection with the operation of unit personal and protective equipment programs. By constant study, analysis, and observations of the use of the equipment, flight surgeons will seek ways and means to improve individual items, assuring greater protection and more bodily comfort. G-suits, partial pressure suits, immersion suits, ventilated clothing, oxygen masks, bail-out equipment, parachutes, body armor, survival equipment, and so forth, will be considered. Flight surgeons will cooperate with personnel charged with survival training and personal equipment to assure that all flying personnel using these items have received adequate and proper indoctrination in their care and use, and that such items are immediately available for use when required. Corrective action, when indicated, will be recommended to the unit commander. Problems of sound and vibration will be studied if they adversely affect the health or efficiency of aircrew personnel at operational levels and proper countermeasures will be recommended when indicated."

"16c. Reference files. The vigorous and successful prosecution of the program will require the establishment by individual flight surgeons of a reference file consisting of all available aeromedical literature, research reports, and so forth."

U.S. Navy flight surgeons are faced with most of the same or similar problems as their Air Force counterparts in the everyday practice of their specialty and it is hoped that each is fully aware of his responsibility to the pilots and aircrewmen who depend upon him for training and guidance.

A true flight surgeon will spend many hours working with the survival officer, safety officer, and the oxygen equipment officer in training and outfitting personnel under his cognizance. It is not enough that a flight surgeon sees to the health of his unit, he is also charged with the safety and survival of each and every man in that unit.

The flight surgeon in the field is in an ideal position to study and recommend changes and improvements to existing equipment and to develop new and more acceptable equipment. The flight surgeons with operational units can well be the most fertile source of developmental information available. It is recommended that those flight surgeons with new ideas forward such information with adequate descriptive literature and photographs to the Aviation Medicine Division, Bureau of Medicine and Surgery.

The good flight surgeon is never satisfied with existing equipment or procedures; he constantly tries to improve on both. In doing so, he must know the existing equipment and procedures and he must be familiar with all relevant regulations, instructions, notices, and orders. Each flight surgeon should have available for ready reference, all such literature and should review periodically such information with members of his unit.

If you are a flight surgeon, you should practice aviation medicine in its fullest concept. You must get out of the dispensary or infirmary and into your group or squadron area to see all of your unit's personnel.

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#### Aero-Medical Association Meeting

The Aero-Medical Association has just concluded its 25th annual meeting at the Hotel Statler in Washington, D.C. It is indeed unfortunate that all the Naval Flight Surgeons, both Regular and Reserve, could not have attended. The Scientific Program was by far the finest to date with a number of foreign delegates presenting papers. Forty foreign representatives were present, and among them were the leading military and civilian flight surgeons of 17 friendly nations.

More than 1,100 members and guests registered for the 3-day meeting. Attendance at each session was at a maximum limit. The opening ceremony on 29 March consisted of a band concert by the U.S. Air Force Band, an invocation by Rear Admiral Maurice Sheehy (ChC) USNR, and an address of welcome by the Association's President, Rear Admiral Bertram Groesbeck, Jr. (MC) USN (Ret.).

One hundred and seventy-one members attended the Business Luncheon held at noon on Tuesday, 30 March. The U.S. Army Band Orchestra played during the meal. The meeting was climaxed by the "Honors Night" Dinner. The more than 450 dinner guests were entertained at a pre-dinner reception given by the Piasecki Helicopter Corporation of Morton, Pa. At the dinner the U.S. Navy Band and featured soloists entertained. The following awards were presented: John C. Flanagan, Ph.D., received the Raymond F. Longacre Award; John P. Marbarger, Ph.D., received the Arnold D. Tuttle Award; and William R. Stovall, M.D., received the Theodore C. Lyster Award. Two Navy men, CDR Sidney I. Brody (MC) USN and LCDR Edward



L. Beckman (MC) USN, were announced as Fellows of Aviation Medicine. Dr. Louis H. Bauer was the principle speaker and, in his honor, Admiral Groesbeck announced the new Louis H. Bauer Award and Honorarium to be given each year by the Association. Among those present at the Head Table during the dinner were the Honorable Frank B. Berry, Assistant Secretary of Defense for Health and Medical Affairs; the Honorable Frederick B. Lee, Administrator of Civil Aeronautics; and Mr. Don Berlin, President of the Piasecki Helicopter Corporation.

Admiral Groesbeck, as retiring president, received the Past President Pin from Dr. Bauer and turned the administrative reins of the Association over to Brigadier General Otis O. Benson, USAF(MC), who adjourned the meeting.

The meeting was the most successful to date. The Navy scientific display occupying the entire Capital Terrace was outstanding. Reserve officers received 1 retirement point credit for each day of session attended. Many active duty and inactive Reserve naval officers greeted old acquaintances and made new friends at this meeting. The 26th annual meeting will also be held in Washington, D. C., on 21-23 March 1955.

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Defects Noted On SF-88's Submitted to BuMed:  
February and March 1954

Omissions .....	205
Excess copies .....	77
Lack of copies .....	17
Carbon copies not legible .....	5
Carelessness in recording results .....	10
No designator after rank .....	50
Flight time omitted .....	40
Not fully explaining dental defects of NavCad applicants .....	1
Not recording C. E. R. and improperly placing pulse in spaces .....	29
Refractions not properly recorded .....	12
Not leaving right side in column 73 for BuMed endorsement .....	10
Failure to state aviator's service group in recommendation .....	21
No reason given for hospitalization .....	2
Not clarifying or going into enough detail regarding medical defects ...	30
Failure to mention disqualifying defects on SF-89 .....	10
Failure to submit SF-89 .....	5

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Notice

In order to continue the Aviation Supplement of the U. S. Navy Medical News Letter on a bi-monthly basis, it is necessary that the Aviation Medicine Division of the Bureau of Medicine and Surgery receive articles for publication.

Since the close of World War II, the contribution by individuals interested in Aviation Medicine has been practically nonexistent. It is believed that there are many acceptable articles available at the present or that, with little effort, could be written and presented for publication.

Each of you is urged to forward your manuscripts for editing. Articles of general interest to all flight surgeons are desired. Experiences, observations, new developments in equipment, and new techniques in training are always welcome. Help us to keep the supplement on a continuing high plane.

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